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Attorney Docket Number

		OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
101	80	NAIR, A., KUBAN, B., OBUCHOWSKI, N., and VINCE, D., "Assessing Spectral Algorithms to Predict Atherosclerotic Plaque Composition With Normalized and Raw Intravascular Ultrasound Data", Ultrasound in Medicine and Biology, 2001, pp. 1319-1331, Vol. 27, No. 10, Elsevier, U.S.A.	
	BE	NAIR, A., KUBAN, B., TUZCU, E., SCHOENHAGEN, P., NISSEN, S., and VINCE, D., "Coronary Plaque Classification With Intravascular Ultrasound Radiofrequency Data Analysis", Circulation, 2002, pp. 2200-2208; 108, American Heart Association, U.S.A.	
V	BF	KLINGENSMITH, J. and VINCE, D., "B-Spline Methods for Interactive Segmentation and Modeling of Lumen and Vessel Surfaces in Three-Dimensional Intravascular Ultrasound," Computerized Medical Imaging and Graphics 26, 2002, pp. 429-438, Elsevier Science Ltd., U.S.A.	
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Sheet	1	of	1	Attorney Docket Number	895,675-007	

			U.S. PATENT DOCU	MENTS	
Examiner Initials	Cite No.	V.S. Patent Document  Number Kind Code  (if known)	Name of Palentee or Applicant	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/Wi	AA	6,381,350	Klingensmith et al.	04/30/2002	
7	AB	6,200,268	Vince et al.	03/13/2001	
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<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 6 Kind of document by the appropriate symbols as Indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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Sheet 1

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Application Number	10/647,971
Filing Date	August 25, 2003
First Named Inventor	NAIR
Art Unit	Not yet assigned
Examiner Name	Not yet assigned

Attorney Docket Number 895,675-007

**U.S. PATENT DOCUMENTS** Name of Patentee or Pages, Columns, Lines, Where **Publication Date** Examiner **Document Number** MM-DD-YYYY **Applicant of Cited Document** Relevant Passages or Relevant toitials\* Number-Kind Code<sup>2</sup> (I known) Figures Appear <sup>US-</sup> 5,876,343 Teo 03-02-1999 <sup>US-</sup> 6,514,203 02-04-2003 Bukshpan us-6,200,268 03-13-2001 Vince 09-19-2000 US-6,120,445 Grunwald US-US. US-US-US-US-US-US-US-US-US-US-US-US-US.

		FOREI	GN PATENT DOCU	MENTS		
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FORMATION DISCLOSURE STATEMENT BY APPLICANT

Complete If Known **Application Number** 10/647,971 Filing Date August 25, 2003 NAIR et al First Named Inventor 3737 Group Art Unit Examiner Name Francis Jaworski Attorney Docket Number 895,675-007

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U.S. Patent Document		Document	Name of Patentee or Applicant	Date of Publication of Cited Document
Exeminer Initials •	Number	Kind Code <sup>2</sup> (If known)	of Cited Document	MM-DD-YYYY
////	5,638,823		Akay	06/17/1997
	6.659.953		Sumanaweera	12/09/2003

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Framiner Fore		eign Patent Document	Name of Patentee or	Date of Publication of Cited	•
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NY	AYDIN, N., PADAYACHEE, S., MARKUS, H., "The Use of the Wavelet Transform to Describe Embolic Signals", Ultrasound in Medicine and Biology, 1999, pp. 953-958, Vol. 25, No. 6, Elsevier, New York, U.S.A.	
	BALDEWECK, T., LAUGIER, P., HERMENT, A., BERGER, G., "Application of Autoregressive Spectral Analysis for Ultrasound Attenuation Estimation: Interest in Highly Attenuating Medium", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 1995, pp. 99-110, Vol. 42, No. 1, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
	BOOKSTEIN, F., "Principal Warps: Thin-Plate Splines and the Decomposition of Deformations", IEEE Transactions on Pattern Analysis and Machine Intelligence, 1989, pp. 567-585, Vol. 11, No. 6, IEEE Computer Society, New York, U.S.A.	
	BOOKSTEIN, F., Morphometric Tools for Landmark Data: Geometry and Biology, 1991, pp. 55-87, Cambridge University Press, Cambridge, England	
	BRIDAL, S., FORNES, P., BRUNEVAL, P., BERGER, G., "Correlation of Ultrasonic Attenuation (30 to 50 MHz) and Constituents of Atherosclerotic Plaque", Ultrasound in Medicine and Biology, 1997, pp. 691-703, Vol. 23, No. 5, Elsevier, New York, U.S.A.	
	BRIDAL, S., BEYSSEN, B., FORNES, P., JULIA, P., BERGER, G., "Development of Noninvasive Parametric Imaging of Atherosclerotic Plaque", IEEE Ultrasonics Symposium, 1998, pp. 1595-1598, Institute of Electrical and Electronics Engineers, Piscataway, U.S.A.	
	BRIDAL, S., TOUSSAINT, J., RAYNAUD, J., FORNES, P., LEROY-WILLIG, A., BERGER, G., "US Backscatter and Attenuation 30 to 50 MHz and MR T2 at 3 Tesla for Differentiation of Atherosclerotic Artery Constituents In Vitro", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 1998, pp. 1517-1525, Vol. 45, No. 6, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
	CHERIN, E., SAIED, A., LAUGIER, P., NETTER, P., BERGER, G., "Evaluation of Acoustical Parameter Sensitivity to Age-Related and Osteoarthritic Changes in Articular Cartilage Using 50-MHz Ultrasound", Ultrasound in Medicine and Biology, 1998, pp. 341-354, Vol. 24, No. 3, Elsevier, New York, U.S.A.	
	CINCOTTI, G., LOI, G., PAPPALARDO, M., "Frequency Decomposition and Compounding of Ultrasound Medical Images with Wavelet Packets", IEEE Transactions on Medical Imaging, 2001, pp. 764-771, Vol. 20, No. 8, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
	DAUBECHIES, I., "Wavelet Transforms and Orthonormal Wavelet Bases", Proceedings of Symposia in Applied Mathematics, 1993, pp. 1-33, Vol. 47, American Mathematic Society, Providence, U.S.A.	
	DE KROON, M., VAN DER WAL, L., GUSSENHOVEN, W., RUSTERBORGH, H., BOM, N., "Backscatter Directivity and Integrated Backscatter Power of Arterial Tissue", International Journal of Cardiac Imaging, 1991, pp. 265-275, Vol. 6, No. 3-4, Nijhoff, Boston, U.S.A.	
	GEORGIOU, G., COHEN, F., "Tissue Characterization Using the Continuous Wavelet Transform Part I: Decomposition Method", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2001, pp. 355-363, Vol. 48, No. 2, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
V	GEORGIOU, G., COHEN, F., PICCOLI, C., FORSBERG, F., GOLDBERG, B. "Tissue Characterization Using the Continuous Wavelet Transform Part II: Application on Breast RF Data", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2001, pp. 364-373, Vol. 48, No. 2, Institute of Electrical and Electronics Engineers, New York, U.S.A.	

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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				Application Number	10/647,971	
INFORMATION DISCLOSURE			OSURE	Filing Date	August 25, 2003	
STATE	STATEMENT BY APPLICANT			First Named Inventor	NAIR et al	
•				Group Art Unit	3737	
(u	se as many :	sheets as nec	essary)	Examiner Name	Francis Jaworski	
Sheet	2	of	3	Attorney Docket Number	895,675-007	

Examiner	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher,	T
Initials	city and/or country where published.	
1.	GUSSENHOVEN, E., ESSED, C., LANCEE, C., MASTIK, F., FRIETMAN, P., VAN EGMOND, F., REIBER, J.,	
	BOSCH, H., VAN URK, H., ROELANDT, J., BOM, N., "Arterial Wall Characteristics Determined by Intravascular	
MV.	Ultrasound Imaging: An In Vitro Study", Journal of the American College of Cardiology, 1989, pp. 947-952, Vol. 14, No. 4. Elsevier Biomedical, New York, U.S.A.	
1/	GUSSENHOVEN, E., FRIETMAN, P. THE, S., VAN SUYLEN, R., VAN EGMOND, F., LANCEE, C., VAN URK, H.,	
	ROELANDT, J., STUNEN, T., BOM, N., "Assessment of Medial Thinning in Atherosclerosis by Intravascular	ĺ
- /	Ultrasound", The American Journal of Cardiology, 1991, pp. 1625-1632, Vol. 68, No. 17, Cahners Publising Company,	l
- 1	Newton U.S.A.	
	JEREMIAS, A., KOLZ, M., IKONEN, T., GUMMERT, J., OSHIMA, A., HAYASE, M., HONDA, Y., KOMIYAMA, N.,	
- 1	BERRY, G., MORRIS, R., YOCK, P., FITZGERALD, P., "Feasibility of In Vivo Intravascular Ultrasound Tissue	
- 1	Characterization in the Detection of Early Vascular Transplant Rejection", Circulation, 1999, pp. 2127-2130, Vol. 100,	
	No. 21, American Heart Association, Dallas, U.S.A.  KAWASAKI, M., TAKATSU, H., NODA, T., ITO, Y., KUNISHIMA, A., ARAI, M., NISHIGAKI, K., TAKEMURA,	
1 .	G., MORITA, N., MINATOGUCHI, S., FUJIWARA, H., "Noninvasive Quantitative Tissue Characterization and Two-	i
	Dimensional Color-Coded Map of Human Atherosclerotic Lesions Using Ultrasound Integrated Backscatter-Comparison	
- 1	Between Histology and Integrated Backscatter Images", Journal of the American College of Cardiology, 2001, pp. 486-	
- 1	492. Vol. 38. No. 2. Elsevier. New York, U.S.A.	
	KAWASAKI, M., TAKATSU, H., NODA, T., SANO, K., ITO, Y., HAYAKAWA, K., TSUCHIYA, K., ARAI, M.,	
1	NISHIGAKI, K., TAKEMURA, G., MINATOGUCHI, S., FUJIWARA, T., FUJIWARA, H., "In Vivo Quantitative Tissue	
	Characterization of Human Coronary Arterial Plaques by Use of Integrated Backscatter Intravascular Ultrasound and	
1	Comparison with Angioscopic Findings", Circulation, 2002, pp. 2487-2492, Vol. 105, No. 21, American Heart	٠
	Association, Dallas, U.S.A.  LIZZI, F., GREENEBAUM, M., FELEPPA, E., ELBAUM, M., COLEMAN, D., "Theoretical Framework for Spectrum	$\vdash$
1	Analysis in Ultrasonic Tissue Characterization", Journal of the Acoustical Society of America, 1983, pp. 1366-1373, Vol.	
1	74. No. 4. American Institute of Physics for the Acoustical Society of America, New York, U.S.A.	
1	LIZZI, F., ASTOR, M., FELEPPA, E., SHAO, M., KALISZ, A., "Statistical Framework for Ultrasonic Spectral Parameter	Γ
1	Imaging", Ultrasound in Medicine and Biology, 1997, pp. 1371-1382, Vol. 23, No. 9, Elsevier, New York, U.S.A.	
	LOCKWOOD, G., RYAN, L., HUNT, J., FOSTER, F., "Measurement of the Ultrasonic Properties of Vascular Tissues	<u> </u>
1	and Blood from 35-65 MHz", Ultrasound in Medicine and Biology, 1991, pp. 653-666, Vol. 17, No. 7, Elsevier, New	1
<u> </u>	York, U.S.A.	<u> </u>
	MARPLE, S., Digital Spectral Analysis with Applications, 1987, pp. 136-144, 154-158, 198-202, 457-458, Prentice-	
į .	Hall, Inc., Englewood Cliffs, U.S.A.	
<del>                                     </del>	MOORE, M., SPENCER, T., SALTER, D., KEARNEY, P., SHAW, T., STARKEY, I., FITZGERALD, P., ERBEL, R.,	
Į.	LANGE, A., MCDICKEN, N., SUTHERLAND, G., FOX, K., "Characterisation of Coronary Atheroselerotic Morphology	
	by Spectral Analysis of Radiofrequency Signal: In Vitro Intravascular Ultrasound Study with Histological and	
	Radiological Validation", Heart, 1998, pp. 459-467, Vol. 79, No. 5, BMJ Publishing Group, London, England	
1	NAIR, A., Comparison of the Ability of Spectral Algorithms to Predict Atherosclerotic Plaque Composition with Radio	
1	Frequency Intravascular Ultrasound Data", Masters Thesis, cataloged on Case Western Reserve University library system April 9, 2001, pp. 1-127, Case Western Reserve University, Cleveland, U.S.A.	
	QIAN, S., CHEN, D., "Joint Time-Frequency Analysis", IEEE Signal Processing Magazine, 1999, pp. 52-67, Vol. 16,	<del> </del>
1	Institute of Electrical and Electronics Engineers, New York, U.S.A.	
		<b> </b>
	RASHEED, Q., NAIR, R., SHEEHAN, H., HODGSON, J., "Correlation of Intracoronary Ultrasound Plaque	
	Characteristics in Atherosclerotic Coronary Artery Disease Patients with Clinical Variables", The American Journal of Cardiology, 1994, pp. 753-758, Vol. 73, No. 11, Cahners Publising Company, Newton, U.S.A.	1
+-	ROHR, K., STIEHL, H., SPRENGEL, R., BUZUG, T., WEESE, J., KUHN, M., "Landmark-Based Elastic Registration	1
1	Using Approximating Thin-Plate Splines", IEEE Transactions on Medical Imaging, 2001, pp. 526-534, Vol. 20, No. 6,	
1	Institute of Flectrical and Electronics Engineers, New York, U.S.A.	
1	SANTOSH, K., TOBOCMAN, W., HAACKE, E., IZEN, S., "In Vivo Biomicroscopy with Ultrasound", Ultrasonics,	Π
1.	1987, pp. 274-282, Vol. 25, No. 5, Butterworth & Co., Guildford, England	
₩	SANTOSH, K., TOBOCMAN, W., HAACKE, E., BOADA, F., "In Vivo Biomicroscopy with Ultrasound 2", Ultrasonics,	$\vdash$
4	1990, pp. 40-49, Vol. 28, No. 1, Butterworth & Co., Guildford, England	
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INFOR	RMATION	DISCL	.OSURE	Filing Date	August 25, 2003	
STATI	STATEMENT BY APPLICANT			First Named Inventor	NAIR et al	
				Group Art Unit	3737	
(4	ise as many sh	eets as nec	essary)	Examiner Name	Francis Jaworski	
Sheet	3	of	3	Attorney Docket Number	895,675-007	ر .

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M	SPENCER, T., RAMO, M., SALTER, D., SUTHERLAND, G., FOX, K., MCDICKEN, W., "Characterisation of Atherosclerotic Plaque by Spectral Analysis of 30 MHz Intravascular Ultrasound Radio Frequency Data", IEEE Ultrasonics Symposium Proceedings, 1996, pp. 1073-1076, Vol. 2, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
1	SPENCER, T., RAMO, M., SALTER, D., ANDERSON, T., KEARNEY, P., SUTHERLAND, G., FOX, K., MCDICKEN, W., "Characterisation of Atherosclerotic Plaque by Spectral Analysis of Intravascular Ultrasound: An In Vitro Methodology", Ultrasound in Medicine and Biology, 1997, pp. 191-203, Vol. 23, No. 2, Elsevier, New York, U.S.A.	
	TAKIUCHI, S., RAKUGI, H., HONDA, K., MASUYAMA, T., HIRATA, N., ITO, H., SUGIMOTO, K., YANAGITANI, Y., MORIGUCHI, K., OKAMURA, A., HIGAKI, J., OGIHARA, T., "Quantitative Ultrasonic Tissue Characterization Can Identify High-Risk Atherosclerotic Alteration in Human Carotid Arteries", Circulation, 2000, pp. 766-770, Vol. 102, No. 7. American Heart Association, Dallas, U.S.A.	
	TOBOCMAN, W., SANTOSH, K., CARTER, J., HAACKE, E., "Tissue Characterization of Arteries with 4 MHz Ultrasound", Ultrasonics, 1995, pp. 331-339, Vol. 33, No. 4, Elsevier, New York, U.S.A.	
	TORRENCE, C., COMPO, G., "A Practical Guide to Wavelet Analysis", Bulletin of the American Meteorological Society, 1998, pp. 61-78, Vol. 79, No. 1, American Meteorological Society, Boston, U.S.A.	
	TOUSSAINT, J., BRIDAL, S., RAYNAUD, J., FORNES, P., LEBON, V., LEROY-WILLIG, A., BERGER, G., "Magnetic Resonance and Ultrasound Imaging Parameters of Human Aortic and Iliac Atherosclerotic Arteries", 11th International Symposium on Atherosclerosis, 1997, p. 271, Elsevier, New York, U.S.A.	
	VINCE, D., DIXON, K., COTHREN, R., CORNHILL, J., "Comparison of Texture Analysis Methods for the Characterization of Coronary Plaques in Intravascular Ultrasound Images", Computerized Medical Imaging and Graphics, 2000, pp. 221-229, Vol. 24, No. 4, Pergamon Press, New York, U.S.A.	
	WATSON, R., MCLEAN, C., MOORE, M., SPENCER, T., SALTER, D., ANDERSON, T., FOX, K., MCDICKEN, W., "Classification of Arterial Plaque by Spectral Analysis of In Vitro Radio Frequency Intravascular Ultrasound Data", Ultrasound in Medicine and Biology, 2000, pp. 73-80, Vol. 26, No. 1, Elsevier, New York, U.S.A.	
	WEAR, K., WAGNER, R., GARRA, B., "High Resolution Ultrasonic Backscatter Coefficient Estimation Based on Autoregressive Spectral Estimation Using Burg's Algorithm", IEEE Transactions on Medical Imaging, 1994, pp. 500-507, Vol. 13, No. 3, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
	WEAR, K., WAGNER, R., GARRA, B., "A Comparison of Autoregressive Spectral Estimation Algorithms and Order Determination Methods in Ultrasonic Tissue Characterization", IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 1995, pp. 709-716, Vol. 42, No. 4, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
	WEISS, L., SIBUL, L., "Weighted Time-Frequency and Time-Scale Transforms for Non-Stationary Signal Detection", Proceedings of SPIE – The International Society for Optical Engineering, 1997, pp. 368-377, Vol. 3169, Society of Photo- Optical Instrumentation Engineers, Bellingham, U.S.A.	
	WILSON, L., NEALE, M., TALHAMI, H., APPLEBERG, M., "Preliminary Results from Attenuation-Slope Mapping of Plaque Using Intravascular Ultrasound", Ultrasound in Medicine and Biology, 1994, pp. 529-542, Vol. 20, No. 6, Elsevier, New York, U.S.A.	
	YOSHIDA, K., YOSHIKAWA, J., AKASAKA, T., HOZUMI, T., YAMAURA, Y., SHAKUDO, M., TAKAGI, T., MAEDA, K., OKUMACHI, F., SHIRATORI, K., KOIZUMI, K., MINAGOE, S., "Intravascular Ultrasound Imaging – In Vitro and In Vivo Validation", Japanese Circulation Journal, 1992, pp. 572-577, Vol. 56, No. 6, Japanese Circulation Society, Kyoto, Japan	
	ZHANG, X., DEJONG, S., MCKAY, C., COLLINS, S., SONKA, M., "Automated Characterization of Plaque Composition from Intravascular Ultrasound Images", Computers in Cardiology, 1996, pp. 649-652, Vol. 23, IEEE Computer Society, Long Beach, U.S.A.	
V	ZHANG, X., MCKAY, C., , SONKA, M., "Tissue Characterization in Intravascular Ultrasound Images", IEEE Transactions on Medical Imaging, 1998, pp. 889-899, Vol. 17, No. 6, Institute of Electrical and Electronics Engineers, New York, U.S.A.	
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Application Number	10/647,971				
Filing Date	08/25/2003				
First Named Inventor	Nair				
Art Unit	3736				
Examiner Name	Not yet assigned				
Altomey Docket Number	895,675-007				

U. S. PATENT DOCUMENTS Name of Patentee or Cite Publication Date Pages, Columns, Lines, Where Examiner **Document Number** No.1 MM-DD-YYYY Applicant of Cited Document Relevant Pessages or Relevant Figures Appear Number-Kind Code<sup>2</sup> (f known) us- 4.228,804 A01 10/21/1980 Holasek <sup>US-</sup> 4,511,984 04/16/1985 Sumino A02 US- 4,561,019 12/24/1985 Lizzi A03 <sup>TUS-</sup> 4,575,799 03/11/1986 Miwa A04 US- 4,858,124 08/15/1989 Lizzi A05 08/17/1993 D'Sa US- 5,235,984 A06 <sup>US-</sup> 5,363,850 11/15/1994 Soni A07 US- 5,417,215 05/23/1995 **Evans** A08 US- 5,445,155 08/29/1995 Sieben A09 US-5,724,972 A10 03/10/1998 Petrofsky <sup>US-</sup> 5,885,218 03/23/1999 Teo A11 <sup>US-</sup> 5.938.607 08/17/1999 Jago A12 <sup>US-</sup> 5,957,138 09/28/1999 Lin A13 US-6,050,946 04/18/2000 Teo A14 us-6,095,976 A15 08/01/2000 Nachotomy 08/22/2000 US-6,106,460 Panescu A16 Napolitano A17 us-6,106,465 08/22/2000 <sup>US-</sup> 6,152,878 Nachotomy A18 11/28/2000 A19 US-6,217,517 04/17/2001 Grunwald

		FOREIGN	PATENT DOCU	MENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages	4
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Application Number	10/647,971				
Filing Date	08/25/2003				
First Named Inventor	Nair				
Art Unit	3736				
Examiner Name	Not yet assigned				
Attorney Docket Number	895,675-007				

Examiner	Cite	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where	
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Mi	A20	<sup>US-</sup> 6,238,342	05/29/2001	Feleppa		
7	A21	<sup>US-</sup> 6,254,541	07/03/2001	Teo		
T	A22	<sup>US-</sup> 6,287,259	09/11/2001	Grunwald		
T	A23	<sup>US-</sup> 6,306,089	10/23/2001	Coleman		
$\neg \tau$	A24	<sup>US-</sup> 6,335,980	01/01/2002	Armato		
	A25	<sup>US-</sup> 6,454,715	09/24/2002	Teo		
7	A26	<sup>US-</sup> 6,514,202	02/04/2003	Grunwald		
	A27	<sup>US-</sup> 6,544,187	04/08/2003	Seward		
	A28	<sup>US-</sup> 2001/0014774	08/16/2001	Grunwald		
$T^{-}$	A29	<sup>US-</sup> 2003/0028118	02/03/2003	Dupree		
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